REC'D 3 1 MAY 2006

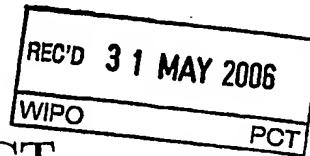WIPO   PCT

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

100011

22/F,Great Eagle Centre,23 Harbour
Road, Wanchai, HONG KONG, P.R.China

CHINA PATENT AGENT(H.K.) LTD

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 *bis*.1)

Date of mailing *(day/month/year)*	25.MAY 2006 (2 5 · C 5 · 2 0 0 6)

Applicant's or agent's file reference	FOR FURTHER ACTION
FPEL05150055	see paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/CN2005/001809	31.Oct 2005(31.10.2005)	

International Patent Classification (IPC) or both national classification and IPC
G06F 9/318 (2006.01) i

Applicant
INTEL CORPORATION et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I   Basis of the opinion
- ☐ Box No.II   Priority
- ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV   Lack of unity of invention
- ☒ Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i)with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No.VI   Certain documents cited
- ☐ Box No. VII   Certain defects in the international application
- ☐ Box No.VIII   Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

· For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN	Date of completion of this opinion	Authorized officer
The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	10.May 2006 (10.05.2006)	ZHANG,Ying Telephone No. 86-010 62084956

Form PCT/ISA/237(cover sheet)(April 2005)

Box No. I	Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

   a. type of material
     ☐ a sequence listing
     ☐ table(s) related to the sequence listing

   b. format of material
     ☐ on paper
     ☐ in electronic form

   c. time of filing/furnishing
     ☐ contained in the international application as filed
     ☐ filed together with the international application in electronic form
     ☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

| Box No. V | Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |

1. Statement:

| Novelty (N) | Claims | 1-20 | YES |
| | Claims | None | NO |

| Inventive step (IS) | Claims | 1-20 | YES |
| | Claims | None | NO |

| Industrial applicability (IA) | Claims | 1-20 | YES |
| | Claims | None | NO |

2. Citations and explanations

The present invention discloses a method, a processing system and a apparatus for managing type information for operands on an operand stack.

D1 ,D2 are considered to be the closest prior art:

D1: WO , A1,0004444

D2: WO ,A1,2004068341

D1 discloses a apparatus for accelerating move operations, includes a look-ahead unit which detects move instructions upon selection of the move operations for dispatch within a processor, and signals a register rename unit, which reassigns the rename register associated with the source register to the destination register. A lookahead unit accelerates moves from a base pointer register to a stack pointer register, and vice-versa. The stack pointer register may be used as a source operand e.g. an address operand.

D2 discloses a memory file links data value identified by tag to speculative result of data loading operation, when address pattern of loading operation matches with stored pattern. Execution core accesses speculative result when storing loaded data. Memory file predicts whether register is used as general-purpose register or stack frame pointer, to find whether address pattern of memory operation matches with stored pattern.

Because the present invention uses the type tag management, comprisng: adding the operand tag to a stack and updating a stack pointer responds the addition. The prior art could realize a system consisting of processor and memory, to realize method of a single move operations ,by a base pointer register and a stack pointer register, but could not realize the steps of adding an operand tag to a tag stack and updating a stack pointer for the tag stack to recognize the addition step .It is obvious that claims 1-20 have novelty under PCT Article 33(2); and the technical schemes of these claims are not obvious to the person skilled in the art on the basis of D1 or D2 and the general knowledge the exiting art, thus, claims 1-20 have inventive step under PCT Article 33(3);

Claims 1-20 have industrial applicability under PCT Article 33(4), because the method or apparatus for managing type information for operands on an operands stack can be made or used in the industry.